

Durethan AKV50H3.0 000000

PA 66, 50 % glass fibers, injection molding, heat-aging stabilized

ISO Shortname: ISO 16396-PA 66,GF50,GHR,S14-160

Rheological properties 60x60x2; 290 °C / MT 80 % ISO 294-4 0.37 C Molding shrinkage, parallel 60x60x2; 290 °C / MT 80 % ISO 294-4 0.93 Post-shrinkage, parallel 60x60x2; 120 °C; 4 h % ISO 294-4 0.05 Post-shrinkage, parallel 60x60x2; 120 °C; 4 h % ISO 294-4 0.05 Post-shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 294-4 0.05 Mechanical properties (23 °C/50 % r. h.) Termile modulus 1 mm/min MPa ISO 527-1,-2 16000 C Tensile Stress at break 5 mm/min MPa ISO 527-1,-2 2.5 16000 C Tensile Stress at break 5 mm/min MPa ISO 527-1,-2 2.5 2.5 C Charpy impact strength 23 °C k./m² ISO 179-1eU 100 C Charpy impact strength 23 °C k./m² ISO 179-1eU 100 C Charpy inched impact strength 23 °C k./m² ISO 179-1eA 15 C Charpy notched impact strength 30 °C k./m² ISO 179-1eA 15 C Charpy notched impact strength	Property	Test Condition	Unit	Standard	guide value d.a.m. cond.
C Molding shrinkage, transverse	Rheological properties				
Post-shrinkage, parallel	C Molding shrinkage, parallel	,	%	ISO 294-4	0.37
Post-shrinkage, transverse	C Molding shrinkage, transverse		%	ISO 294-4	0.93
Mechanical properties (23 °C/50 % r. h.) CTensile modulus	Post- shrinkage, parallel	60x60x2; 120 °C; 4 h	%	ISO 294-4	0.05
CTensile modulus 1 mm/min MPa ISO 527-1,-2 16000 CTensile Stress at break 5 mm/min MPa ISO 527-1,-2 230 CTensile Strein at break 5 mm/min % ISO 527-1,-2 23 °C CCharpy impact strength 23 °C kJ/m² ISO 179-1eU 100 CCharpy impact strength -30 °C kJ/m² ISO 179-1eU 100 CCharpy notched impact strength -30 °C kJ/m² ISO 179-1eA 17 CCharpy notched impact strength -30 °C kJ/m² ISO 179-1eA 15 Charpy notched impact strength -40 °C kJ/m² ISO 179-1eA 15 Charpy notched impact strength -30 °C kJ/m² ISO 180-1U 90 Izod impact strength -30 °C kJ/m² ISO 180-1U 90 Izod impact strength -30 °C kJ/m² ISO 180-1A 15 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 13 Flexural strength -30 °C kJ/m² ISO 180-1A 13	Post- shrinkage, transverse	60x60x2; 120 °C; 4 h	%	ISO 294-4	0.09
CTensile Stress at break 5 mm/min MPa ISO 527-1,-2 230 CTensile Strain at break 5 mm/min % ISO 527-1,-2 2.5 CCharpy impact strength 23 °C kJ/m² ISO 179-1eU 100 CCharpy impact strength -30 °C kJ/m² ISO 179-1eU 100 CCharpy notched impact strength 23 °C kJ/m² ISO 179-1eA 17 CCharpy notched impact strength -30 °C kJ/m² ISO 179-1eA 15 Charpy notched impact strength -40 °C kJ/m² ISO 180-1U 90 Izod impact strength -30 °C kJ/m² ISO 180-1U 90 Izod impact strength -30 °C kJ/m² ISO 180-1U 90 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 15 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 15 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 15 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 15	Mechanical properties (23 °C/50 % r. h.)				
CTensile Strain at break	C Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	16000
CCharpy impact strength 23 °C kJ/m² ISO 179-1eU 100 CCharpy impact strength -30 °C kJ/m² ISO 179-1eU 100 CCharpy notched impact strength 23 °C kJ/m² ISO 179-1eA 17 CCharpy notched impact strength -30 °C kJ/m² ISO 179-1eA 15 Charpy notched impact strength -40 °C kJ/m² ISO 180-1U 90 Izod impact strength 23 °C kJ/m² ISO 180-1U 90 Izod impact strength -30 °C kJ/m² ISO 180-1U 90 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 15 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 15 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 15 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 15 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 13 Flexural strength -30 °C kJ/m² ISO 180-1A 13	C Tensile Stress at break	5 mm/min	MPa	ISO 527-1,-2	230
Charpy impact strength	C Tensile Strain at break	5 mm/min	%	ISO 527-1,-2	2.5
Charpy notched impact strength 23 °C kJ/m² ISO 179-1eA 17	C Charpy impact strength	23 °C	kJ/m²	ISO 179-1eU	100
C Charpy notched impact strength -30 °C kJ/m² ISO 179-1eA 15 Charpy notched impact strength -40 °C kJ/m² ISO 179-1eA 14 Izod impact strength 23 °C kJ/m² ISO 180-1U 90 Izod impact strength -30 °C kJ/m² ISO 180-1U 90 Izod notched impact strength 23 °C kJ/m² ISO 180-1A 15 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 15 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 15 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 15 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 13 Flexural strength -30 °C kJ/m² ISO 180-1A 13 Flexural strength -30 °C kJ/m² ISO 180-1A 13 Flexural strength -2 mm/min MPa ISO 178-A 3.0 Therength -2 mm/min MPa ISO 178-A 3.0	C Charpy impact strength	-30 °C	kJ/m²	ISO 179-1eU	100
Charpy notched impact strength	C Charpy notched impact strength	23 °C	kJ/m²	ISO 179-1eA	17
Izod impact strength	C Charpy notched impact strength	-30 °C	kJ/m²	ISO 179-1eA	15
Izod impact strength	Charpy notched impact strength	-40 °C	kJ/m²	ISO 179-1eA	14
Izod notched impact strength 23 °C kJ/m² ISO 180-1A 15 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 13 Flexural modulus 2 mm/min MPa ISO 178-A 15300 Flexural strength 2 mm/min MPa ISO 178-A 360 Flexural strength 2 mm/min MPa ISO 178-A 360 Flexural strain at flexural strength 2 mm/min % ISO 178-A 3.0 Thermal properties	Izod impact strength	23 °C	kJ/m²	ISO 180-1U	90
Izod notched impact strength -30 °C kJ/m² ISO 180-1A 13	Izod impact strength	-30 °C	kJ/m²	ISO 180-1U	90
Flexural modulus	Izod notched impact strength	23 °C	kJ/m²	ISO 180-1A	15
Flexural strength	Izod notched impact strength	-30 °C	kJ/m²	ISO 180-1A	13
Flexural strain at flexural strength	Flexural modulus	2 mm/min	MPa	ISO 178-A	15300
Thermal properties C Melting temperature	Flexural strength	2 mm/min	MPa	ISO 178-A	360
C Melting temperature 10 °C/min °C ISO 11357-1,-3 262 C Temperature of deflection under load 1.80 MPa °C ISO 75-1,-2 250 C Temperature of deflection under load 0.45 MPa °C ISO 75-1,-2 250 C Burning behavior UL 94 1.5 mm Class UL 94 HB C Burning behavior UL 94 0.75 mm Class UL 94 HB Electrical properties (23 °C/50 % r. h.) C Relative permittivity 100 Hz - IEC 60250 5.0 C Relative permittivity 1 MHz - IEC 60250 4.4 C Dissipation factor 100 Hz 10° IEC 60250 250 C Dissipation factor 1 MHz 10° IEC 60250 230 C Volume resistivity Ohm-m IEC 60093 1E13 C Surface resistivity Ohm IEC 60243-1 38 C Electric strength 1 mm kV/mm IEC 60112 600 Other properties (23 °C)	Flexural strain at flexural strength	2 mm/min	%	ISO 178-A	3.0
C Temperature of deflection under load 1.80 MPa °C ISO 75-1,-2 250 C Temperature of deflection under load 0.45 MPa °C ISO 75-1,-2 250 C Burning behavior UL 94 1.5 mm Class UL 94 HB C Burning behavior UL 94 0.75 mm Class UL 94 HB Electrical properties (23 °C/50 % r. h.) C Relative permittivity 100 Hz - IEC 60250 5.0 C Relative permittivity 1 MHz - IEC 60250 4.4 C Dissipation factor 100 Hz 10° Hz IEC 60250 250 C Dissipation factor 1 MHz 10° IEC 60250 230 C Volume resistivity Ohm·m IEC 60093 1E13 C Surface resistivity Ohm IEC 60093 1E16 C Electric strength 1 mm kV/mm IEC 60243-1 38 C Comparative tracking index CTI Solution A Rating IEC 60112 600	Thermal properties				
C Temperature of deflection under load 0.45 MPa °C ISO 75-1,-2 250 C Burning behavior UL 94 1.5 mm Class UL 94 HB C Burning behavior UL 94 0.75 mm Class UL 94 HB Electrical properties (23 °C/50 % r. h.) C Relative permittivity 100 Hz - IEC 60250 5.0 C Relative permittivity 1 MHz - IEC 60250 4.4 C Dissipation factor 100 Hz 10° IEC 60250 250 C Dissipation factor 1 MHz 10° IEC 60250 230 C Volume resistivity Ohm-m IEC 60093 1E13 C Surface resistivity Ohm IEC 60093 1E16 C Electric strength 1 mm kV/mm IEC 60243-1 38 C Comparative tracking index CTI Solution A Rating IEC 60112 600 Other properties (23 °C)	C Melting temperature	10 °C/min	°C	ISO 11357-1,-3	262
C Burning behavior UL 94 1.5 mm Class UL 94 HB C Burning behavior UL 94 0.75 mm Class UL 94 HB Electrical properties (23 °C/50 % r. h.) C Relative permittivity 100 Hz - IEC 60250 5.0 C Relative permittivity 1 MHz - IEC 60250 4.4 C Dissipation factor 100 Hz 10° IEC 60250 250 C Dissipation factor 1 MHz 10° IEC 60250 230 C Volume resistivity Ohm·m IEC 60093 1E13 C Surface resistivity Ohm IEC 60093 1E16 C Electric strength 1 mm kV/mm IEC 60243-1 38 C Comparative tracking index CTI Solution A Rating IEC 60112 600 Other properties (23 °C)	C Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	250
C Burning behavior UL 94 0.75 mm Class UL 94 HB Electrical properties (23 °C/50 % r. h.) C Relative permittivity	C Temperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	250
Electrical properties (23 °C/50 % r. h.) C Relative permittivity 100 Hz - IEC 60250 5.0 C Relative permittivity 1 MHz - IEC 60250 4.4 C Dissipation factor 100 Hz 10°4 IEC 60250 250 C Dissipation factor 1 MHz 10°4 IEC 60250 230 C Volume resistivity Ohm·m IEC 60093 1E13 C Surface resistivity Ohm IEC 60093 1E16 C Electric strength 1 mm kV/mm IEC 60243-1 38 C Comparative tracking index CTI Solution A Rating IEC 60112 600 Other properties (23 °C)	C Burning behavior UL 94	1.5 mm	Class	UL 94	НВ
C Relative permittivity 100 Hz - IEC 60250 5.0 C Relative permittivity 1 MHz - IEC 60250 4.4 C Dissipation factor 100 Hz 10° IEC 60250 250 C Dissipation factor 1 MHz 10° IEC 60250 230 C Volume resistivity Ohm·m IEC 60093 1E13 C Surface resistivity Ohm IEC 60093 1E16 C Electric strength 1 mm kV/mm IEC 60243-1 38 C Comparative tracking index CTI Solution A Rating IEC 60112 600 Other properties (23 °C)	C Burning behavior UL 94	0.75 mm	Class	UL 94	НВ
C Relative permittivity 1 MHz - IEC 60250 4.4 C Dissipation factor 100 Hz 10 ⁻⁴ IEC 60250 250 C Dissipation factor 1 MHz 10 ⁻⁴ IEC 60250 230 C Volume resistivity Ohm·m IEC 60093 1E13 C Surface resistivity Ohm IEC 60093 1E16 C Electric strength 1 mm kV/mm IEC 60243-1 38 C Comparative tracking index CTI Solution A Rating IEC 60112 600 Other properties (23 °C)	Electrical properties (23 °C/50 % r. h.)				
C Dissipation factor 100 Hz 10 ⁴ IEC 60250 250 C Dissipation factor 1 MHz 10 ⁴ IEC 60250 230 C Volume resistivity Ohm·m IEC 60093 1E13 C Surface resistivity Ohm IEC 60093 1E16 C Electric strength 1 mm kV/mm IEC 60243-1 38 C Comparative tracking index CTI Solution A Rating IEC 60112 600 Other properties (23 °C)	C Relative permittivity	100 Hz	-	IEC 60250	5.0
C Dissipation factor 1 MHz 10 ⁻⁴ IEC 60250 230 C Volume resistivity Ohm·m IEC 60093 1E13 C Surface resistivity Ohm IEC 60093 1E16 C Electric strength 1 mm kV/mm IEC 60243-1 38 C Comparative tracking index CTI Solution A Rating IEC 60112 600 Other properties (23 °C)	C Relative permittivity	1 MHz	-	IEC 60250	4.4
C Volume resistivity Ohm·m IEC 60093 1E13 C Surface resistivity Ohm IEC 60093 1E16 C Electric strength 1 mm kV/mm IEC 60243-1 38 C Comparative tracking index CTI Solution A Rating IEC 60112 600 Other properties (23 °C)	C Dissipation factor	100 Hz	10 ⁻⁴	IEC 60250	250
C Surface resistivity Ohm IEC 60093 1E16 C Electric strength 1 mm kV/mm IEC 60243-1 38 C Comparative tracking index CTI Solution A Rating IEC 60112 600 Other properties (23 °C)	C Dissipation factor	1 MHz	10 ⁻⁴	IEC 60250	230
C Surface resistivity Ohm IEC 60093 1E16 C Electric strength 1 mm kV/mm IEC 60243-1 38 C Comparative tracking index CTI Solution A Rating IEC 60112 600 Other properties (23 °C)	C Volume resistivity			IEC 60093	1E13
C Electric strength 1 mm kV/mm IEC 60243-1 38 C Comparative tracking index CTI Solution A Rating IEC 60112 600 Other properties (23 °C)	C Surface resistivity		Ohm		
C Comparative tracking index CTI Solution A Rating IEC 60112 600 Other properties (23 °C)		1 mm	kV/mm		
Other properties (23 °C)		Solution A	Rating	IEC 60112	600
	Other properties (23 °C)	,		,	
	C Density		kg/m³	ISO 1183	1570



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Property	Test Condition	Unit	Standard	guide value d.a.m. cond.
Bulk density		kg/m³	ISO 60	700
Processing conditions for test specimens				
C Injection molding-Melt temperature		°C	ISO 294	290
C Injection molding-Mold temperature		°C	ISO 294	80
Processing recommendations				
Drying temperature dry air dryer		°C	-	80
Drying time dry air dryer		h	-	2-6
Residual moisture content		%	Acc. to Karl Fischer	0.03-0.12
Melt temperature (Tmin - Tmax)		°C	-	280-300
Mold temperature		°C	=	80-120

C These property characteristics are taken from the CAMPUS plastics data bank and are based on the international catalogue of basic data for plastics according to ISO 10350.





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Disclaimer for commercial products

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Test values

Unless specified to the contrary, the values given have been established on standardized test specimens at room temperature. The figures should be regarded as guide values only and not as binding minimum values. Kindly note that, under certain conditions, the properties can be affected to a considerable extent by the design of the mould/die, the processing conditions and the coloring.

Processing note

Under the recommended processing conditions small quantities of decomposition product may be given off during processing. To preclude any risk to the health and well-being of the machine operatives, tolerance limits for the work environment must be ensured by the provision of efficient exhaust ventilation and fresh air at the workplace in accordance with the Safety Data Sheet. In order to prevent the partial decomposition of the polymer and the generation of volatile decomposition products, the prescribed processing temperatures should not be substantially exceeded. Since excessively high temperatures are generally the result of operator error or defects in the heating system, special care and controls are essential in these areas.

Conditioning

Conditioning in accordance with ISO 1110 (70 °C; 62 % r.h.)

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